


The evolution of hepatitis B and nutritional support: Case report

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ABSTRACT

Hepatitis B is an infectious disease caused by contact with a source that is positive for both the HBV surface antigen and the “e” antigen of the virus. Hepatitis B is a silent disease and therefore the diagnosis is usually late, favoring the chronicity of diseases that affect the liver. The objective of this article is to present a case study of hepatitis B and

its complications, and the nutritional interventions performed during hospitalization. This is an experience report of monitoring the treatment of a patient affected by hepatitis B and other diseases in the mandatory hospital experience in the discipline of diet therapy II, of the bachelor's degree in nutrition, held at the Hospitalar Foundation of Acre. The progression of liver disease has an impact on nutritional status because it is related to a decrease in energy and protein intake, affected by food restrictions and low-palatable diets, which directly interfere with food consumption. After the patient's follow-up period, it was not possible to observe evolution in his health status, it was possible to identify the progression of the disease through imaging, biochemical and physical exams.

Keywords: Hepatitis B, Nutrition, Liver disease, Nutritional support.

1 INTRODUCTION

Hepatitis B is an infectious disease caused by contact with a positive source for the HBV surface antigen, and for the "e" antigen of the virus. Hepatitis B is a silent disease and therefore the diagnosis is usually late, favoring the chronicity of diseases that affect the liver. The symptomatology of hepatitis B is common to other chronic parenchymal liver diseases and usually manifests only in more advanced stages of the disease. The basic symptoms are: nausea, vomiting, fever, malaise, fatigue, loss of appetite, abdominal pain, jaundice. Worldwide, more than 240 million people have chronic liver disease at risk of progression to morbid complications such as cirrhosis and hepatocellular carcinoma [1].

The hepatitis B virus can trigger solid nodules that appear in the liver (hepatic nodules), most of them of benign origin such as hemangioma, focal nodular hyperplasia, and adenoma. Or Hepatocarcinoma is the main representative of malignant tumors, which has the ability to metastasize. HBV causes hepatocarcinoma by direct and indirect routes, with continuous inflammation and necro-regeneration activity, with the accumulation of potentially critical mutations in the hepatocyte genome, with subsequent malignant transformation and clonal expansion. HBV has been shown to be an oncogenic virus, with the integration of the viral genome to that of the host, which can lead to the activation of cellular genes [2].

Liver cirrhosis It is the final irreversible stage of chronic liver injury, where there is hepatocytic death, which qualifies as diffuse fibrosis, and replacement of liver tissue by regenerative nodules of abnormal structure. Several causes can generate the picture of liver cirrhosis, such as liver toxicosis by copper, chronic inflammatory hepatitis, hepatic hypoxia, medication, viral infections, leptospirosis, hepatic collangium complex [3].

Ascites is defined as excess fluid in the peritoneal cavity, the origin of the fluid varies between plasma, bile, blood, lymph, pancreatic juice, urine. Most ascites are caused by liver cirrhosis, with peripheral vasodilation and renal retention of water and sodium [4].

The decrease in the size of the liver and its distorted shape with the presence of hepatic nodules separated by fibrotic bands is caused by continuous destruction of hepatocytes and the exaggerated deposition of collagen. This condition causes disorganization of the intrahepatic circulation and induces portal hypertension, which is a significant complication factor of decompensated cirrhosis, being responsible for the appearance of ascites and bleeding from esophageal varices, two complications that indicate the presence of decompensated cirrhosis. Ascites is one of the most common complications of cirrhosis, as well as renal sodium retention, which are consequences of effective hypovolemia [4].

The progression of liver disease impacts on nutritional status because it is related to decreased energy and protein intake, affected by dietary restrictions and diets of low palatability, which directly interfere with food consumption. Malnutrition is one of the most frequent complications in patients with liver cirrhosis, occurring in 20% to 50% of patients, being associated with a worse prognosis of liver disease [5].

The objective of this article is to present a case study of hepatitis B and its complications, and the nutritional interventions performed during hospitalization.

2 METHODOLOGY

This is a report of an experience of monitoring the treatment of a patient affected by hepatitis B and other diseases in the mandatory hospital experience in the discipline of diet therapy II, of the bachelor's degree in nutrition, held at the Hospital Foundation of Acre, a large hospital, considered a teaching hospital. The said hospital is located in the green way, number 2224, industrial district neighborhood, in Rio Branco Acre.

The hospital experience took place in February 2023, during one week. The students assumed the role of observers of the care received by the patient in question, aiming at the construction of a clinical case at the end of the course.

3 CASE PRESENTATION

3.1 PATIENT IDENTIFICATION

Patient identified as F.D.N.F., 21 years old, male, natural and resident of the municipality of Porto Walter, the patient resides in the municipality with his wife of 18 years of age and a son of 2 years.

3.2 HISTORY OF THE CURRENT DISEASE

Patient reported that 6 years ago he was diagnosed with hepatitis B, undergoing treatment only for 6 months and interrupting due to living in the rural area of difficult access, finding difficulties of locomotion and lack of available medications for treatment. He denied the presence of DM, HAS, DRC.

The patient reported that the initial symptoms before admission were pain in the right hypochondrium, fever, nausea, vomiting. After approximately 15 days of the onset of symptoms, the patient and his family noticed an abdominal swelling. They sought medical attention and the patient was initially admitted to the rural hospital, later transferred to the hospital of Cruzeiro do Sul.

With the evolution of the pathologies, the patient was admitted to the hospital foundation of Acre on February 13, 2023, with a diagnosis of "abdominal pain in the right hypochondrium", and main complaint of abdominal pain. The patient had a regular, anicteric general condition, Normocolored, hydrated, afebrile and cyanotic.

3.3 EVOLUTION AND NUTRITIONAL MANAGEMENT

The day after his admission to the hospital, the patient was submitted to nutritional evaluation, and the NRS questionnaire, the hospital's standard, was applied. He was eutrophic with a BMI of 21.2, scoring 2 on the questionnaire, presenting no nutritional risk. On February 22, 2023, 9 days after hospitalization, the questionnaire was again applied, according to the nutritional bulletin, it was eutrophic according to BMI, however, it presented decreased muscle strength and semiology compatible with malnutrition. Biochemical tests indicated loss of muscle mass, with changes in albumin and creatinine levels. Changes in bilirubin and lipase tests, common in liver patients.

During hospitalization, the patient had daily nutritional follow-up. The calculation of total energy expenditure was performed by determining the basal metabolism rate, according to Harris Benedict, multiplying by the physical activity factor and injury factor. Nutritional requirements were estimated at 2,205kcal. The diet offered to the patient was characterized as: mild, hyperprotein, hypolipidic, supplemented. There was no need for major salt restrictions, given the normal excretion of sodium metabolism in laboratory tests.

The patient showed low acceptance of the diet offered, claiming gastric fullness, inappetence and episodes of emesis. The change in the patient's weight was noticeable, being estimated by the formula of James (1989), due to the picture of moderate ascites and peripheral edema. In this study, anthropometric measurements were also evaluated, which were altered: Adequacy of arm circumference (AC): 59% (<70% severe malnutrition); Triceps skinfold adequacy (TSF): 50% (<70% severe malnutrition).

4 DISCUSSION

The patient F.D.N.F, 21 years old, presents as a basic pathology Hepatitis B, a type of viral hepatitis that affects the liver, although there is no cure, the treatment of hepatitis B is essential to avoid the evolution of the disease, enabling a life with the inactive form of the virus.

When affected by the virus as a child, the patient began treatment, being carried out for a short time, given the difficulties of locomotion and lack of medicines in the city of the interior of Acre. The lack of treatment led to the evolution of the disease, progressing to a case of liver cirrhosis, being aggravated by the case of Ascites and later hepatic nodules and esophageal varices.

The last imaging tests performed by the patient in the period in question showed the possibility of liver and lung metastasis. The hepatitis B virus is described in the literature as an oncological virus, as it has the ability to parasitize the cells of its host, incorporate itself into its DNA and cause malignant cell mutations. By not adhering to the treatment of the disease, the patient facilitated viral replication, which may explain the findings in the imaging studies.

In addition, the patient presents in case of moderate to severe malnutrition, based on biochemical tests and anthropometric evaluation comparing with the evaluation described in the book of clinical nutrition in adults [6]. The picture of malnutrition is common in liver diseases, these patients have hypermetabolism and metabolic stress, in addition to malabsorption, which tends to lead to the picture, presents the worst prognosis in the evolution of the disease. In addition, the patient has low acceptance of the diet offered, refusing the food supplement and presenting some episodes of emesis when taking the medication.

Patients with cirrhosis manifest gastrointestinal symptoms such as gastroparesis and intestinal dysmotility frequently, causing nausea, vomiting and early satiety, limiting nutrient intake [7; 8]. Therefore, the fractionation and reduction of the volume of the meals offered is an effective option for a better intake of the necessary caloric intake.

In addition to the hypermetabolism caused by the pathologies, and the low albumin shown in the biochemical tests, the procedure performed to relieve the picture of moderate ascites (Paracentese), causes the individual to have greater excretion of proteins, requiring a greater intake, therefore, the

diet to be offered was hyperprotein and hypercaloric, aiming at the recovery and maintenance of the patient's weight. In addition, the difficulty of nutrient absorption and difficulty of fat digestion, requires a low-fat diet.

5 FINAL CONSIDERATIONS

After the follow-up period of the patient, it was not possible to observe evolution in his health status, it was possible to identify the progression of the disease through imaging, biochemical and physical examinations. To date, there was no forecast for the hospital discharge of the patient in question. The doctor responsible for the case reports that the patient will be referred for analysis by an oncologist specialist considering the diagnostic possibility of metastasis. If confirmed, the patient will receive palliative care.

The experience in the hospital experience contributed greatly to the learning and reconciliation of theory and practice. It was possible to closely follow the importance of the professional nutritionist in the clinic, and the importance of nutritional therapy for the evolution of an individual affected by serious diseases. In addition, the importance of interdisciplinarity and communication of health professionals in the management of bedridden patients was notorious.

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